

### Abstract

[0040] A control system (20) for controlling the state of charge in an energy storage device (28) by manipulating the voltage of a fuel cell (24) through dynamic system modeling of predetermined parameters (21) for the fuel cell (24) as well as the energy storage device (28). According to the method (100) of the present invention, manipulation (108) of predetermined parameters related to the fuel cell and the energy storage device control the energy storage device to a desired state of charge or divides the load current between the two devices.